

**Abstract**

Disclosed herein are novel phenol oxidizing enzymes naturally-produced by  
5 strains of the species *Stachybotrys* which possess a pH optima in the alkaline range  
and which are useful in modifying the color associated with dyes and colored  
compounds, as well as in anti-dye transfer applications. Also disclosed herein are  
biologically-pure cultures of strains of the genus *Stachybotrys*, designated herein  
*Stachybotrys parvispora* MUCL 38996 and *Stachybotrys chartarum* MUCL 38898,  
10 which are capable of naturally-producing the novel phenol oxidizing enzymes.

Disclosed herein is the amino acid and nucleic acid sequence for  
Stachybotrys phenol oxidizing enzymes as well as expression vectors and host cells  
comprising the nucleic acid. Disclosed herein are methods for producing the phenol  
oxidizing enzyme as well as methods for constructing expression hosts.